portion is transformed into salicine, into salicyluric acid, and probably into oxalic acid. 3. The first urine passed, some hours after ingestion of thirty to forty grains of salicylate of soda, deviates to the left of the plane of polarization; the deviation is due to the salicine produced. 4. The salicylic acid increases in the urine the proportion of azotized substances and of uric acid. 5. Salicine swallowed by man is eliminated unchanged, and with its optical properties, a few hours after it is taken. But by what chemical reaction is this transformation effected of salicylate of acid into salicine or salicyluric acid? On this subject only theories can be formed, but the fact is acquired to science.

A propos of the demonstration of salicylic acid, M. Gubler has remarked that in certain cases the urine is diminished in quantity, whilst in others it is augmented. When, indeed, salicylic acid acts upon normal kidneys, there is diuresis; on diseased kidneys, on the contrary, there is a diminution of the quantity of the urine; in these cases even albumen is sometimes found in considerable quantities. There are, then, two indications here: first, strong doses of salicylic acid may produce a renal lesion; and further, when the kidneys are congested, it is imprudent to prescribe this medicine.

M. Bucquoy supports this observation of M. Gubler, and asks if it is not from uræmia that certain patients died so rapidly when treated with salicylic acid. He mentions further the cases in which this substance was the cause of abortion at six months.—*Brit. Med. Journ.*, Nov. 3, 1877.

Mode of Action of Anæsthetics.

How do anæsthetics act? Is it by combining with certain elements of the ganglion cells of the central nervous apparatus, and thus, by altering their molecular composition, preventing the generation of nerve-force, or interfering with its manifestation? Is it by modifying the circulation in the nerve-centres, or is it by changing the composition of the blood, and rendering it less fit for the nutrition of these highly complex structures? Binz concludes an article on the officinal sleep-producing substances in the *Archiv für Experimentelle Path. u. Pharm.* by saying that these agents possess the power of producing a kind of coagulation of the substance of the cerebral cortex, whilst other agents, though nearly allied to the former in chemical composition, do not possess this power. Morphia, chloral, ether, and chloroform possess, he maintains, a strong affinity for the substance of the cortex of the brain in man; and when they are introduced into the blood they enter into combination with the cerebral substance, opposing or impeding the disintegration of the living substance, and thus rendering it unfit to discharge the functions required of it in the living state. In a paper on the same subject in the *Centralblatt* Heinrich Ranke observes that protracted study of the effects of anæsthetics has led him to very similar conclusions. He has found that the action of chloroform, ether, and amyl on frogs first produces a condition in which, just as in poisoning by curare, no contraction can be induced in muscle by any kind of irritation applied to the motor nerves, though the muscular tissue itself reacts to direct stimulation, and the current in the nerves remains constant both in force and direction. In a later stage of the anæsthesia the muscular tissue itself ceases to respond to the most powerful induction currents, though its proper electro-motor force remains unweakened; and, lastly, at a still more advanced stage, the whole muscular tissue of the body passes into a condition of rigor. He has further found that a solution either of albumen from the brain or of myosin from muscle in very weak salt and water is precipitated by the vapour of the three above-named anæsthetics, and that their power of producing muscle rigor in the case of muscle depends on the coagulation of the myosin. It would have been exceedingly interesting if the view of Binz to the effect that morphia acts also as a coagulating agent upon the ganglion cells could be corroborated, since, if such were the case, it would tend to show that the various kinds of anæsthetics act essentially in the same manner.

Additional experiments have lately been instituted by Ranke, which demonstrated that not only chloroform and chloral hydrate, when injected into the arteries, caused rapid stiffening of the muscles, but that the same influence was exerted by ether, amyl, bromoform, and bromhydrate, whilst when tannin, cupric sulphate, mercury chloride, ferric sulphate, or spirits of wine were injected, though strong fibrillar contractions occurred, and coagulation of the blood, followed by death, in no instance was rigor produced. Iodoform, indeed, appears to form an exception to the conclusion that the rigor-producing action of the anæsthetics is something peculiar to them, for it is not known to possess anæsthetic properties. If injected in solution in ether, rigor is immediately produced, but ether has itself a stiffening action on muscle. Nevertheless Ranke thinks he can distinguish between the action of the iodoform, which is immediate and intense, and that of the ether, which comes on later and is less powerful; and he attributes the failure of iodoform to act as an anæsthetic to its insolubility merely, which, as it were, masks its proper action. Ranke was unable to find that solutions of morphia were able to exert any coagulating influence on muscle either within or without the vessels. It may be asked what relation does the action of these agents on muscle bear to the process of anæsthesia, and in reply Prof. Ranke observes that anæsthetization obviously cannot depend on such a complete coagulation as admits of no further change, since the effects produced by anæsthetic agents are but transitory. But it is very conceivable that an action which in its final stages leads to coagulation of albumen may, in its earlier stages, render, to a certain extent, fixed and immovable the albuminous molecules in the ganglion-cells of the brain, and afterwards in nerve and muscle, the effect passing off with the removal of the cause.—*Lancet*, Nov. 24, 1877.

Action of Pilocarpin on the Eye.

M. GALEZOWSKI, in a communication to the Société de Biologie (*Gaz. des Hop.*, November 6), narrated the results of the trials he had made on the eye with pilocarpin, the active principle of jaborandi. These show it to be possessed of powerful myotic powers. One drop of a mixture consisting of ten parts of water and one-fifth of a part of pilocarpin, instilled into an eye the subject of paralytic mydriasis, gives rise to such a contraction of the pupil that at the end of half an hour this measures scarcely a millimetre in diameter, the contraction continuing for from five to eight hours. This result has been verified upon a great number of patients, so that it may be now stated that pilocarpin possesses myotic powers as active as those of eserine, while it does not excite irritation like that substance, the prolonged employment of which may give rise to peri-orbital pains, intense conjunctivitis, and great nausea. M. Galippe observed that the experiments which he and M. Bochefontaine had made were attended by precisely the same results as those described by M. Galezowski.—*Med. Times and Gaz.*, Nov. 17, 1877.

Sulphate of Atropia in Pathological Sweating.

M. ROYET, in his thesis (*Lyon Méd.*, Nov. 18), furnishes the results of the trials made with this substance by Prof. Vulpian since 1873. These demonstrate the efficacy of atropia in sweating under the most various circumstances—as phthisis, rheumatism, convalescence, prolonged suppuration, hysteria, and the influence of jaborandi. The dose of the sulphate varies from half a milligramme to one and a half, it being very rarely desirable to go beyond this. The most